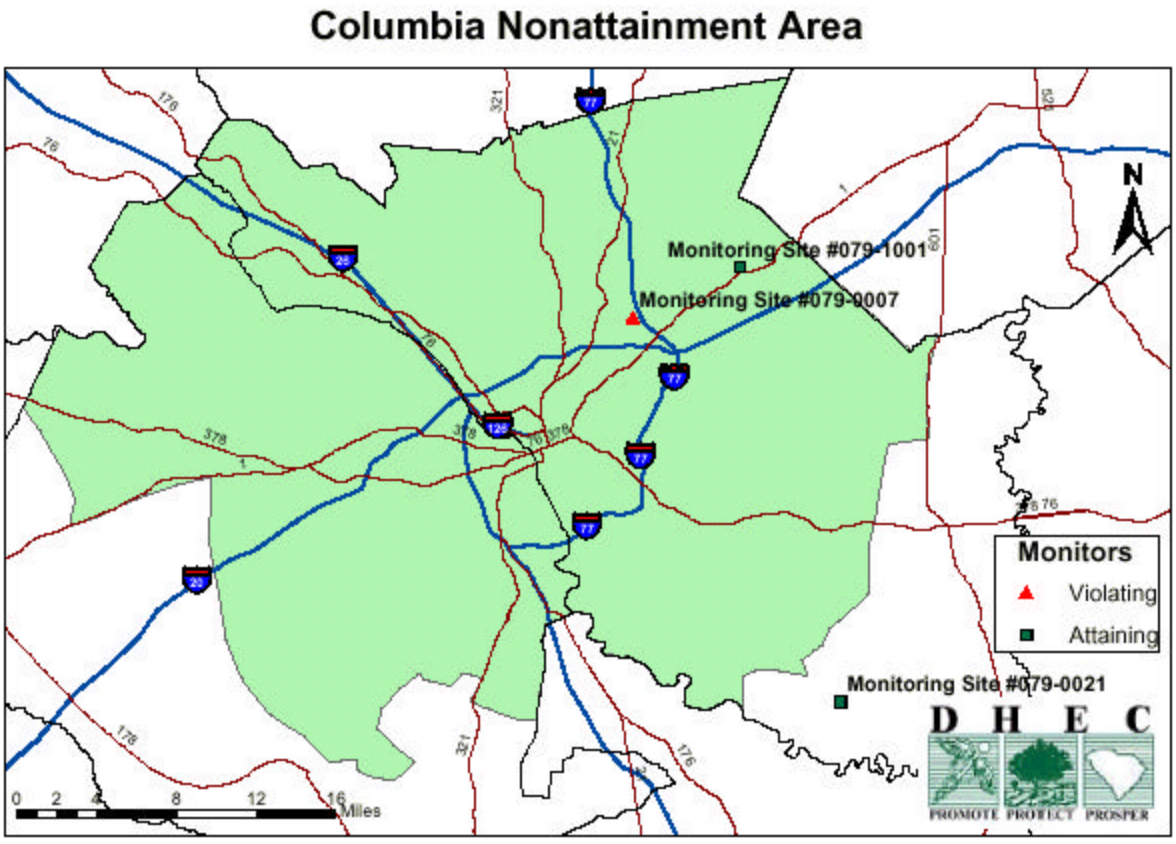



**Figure 1: Columbia Nonattainment Area Map**

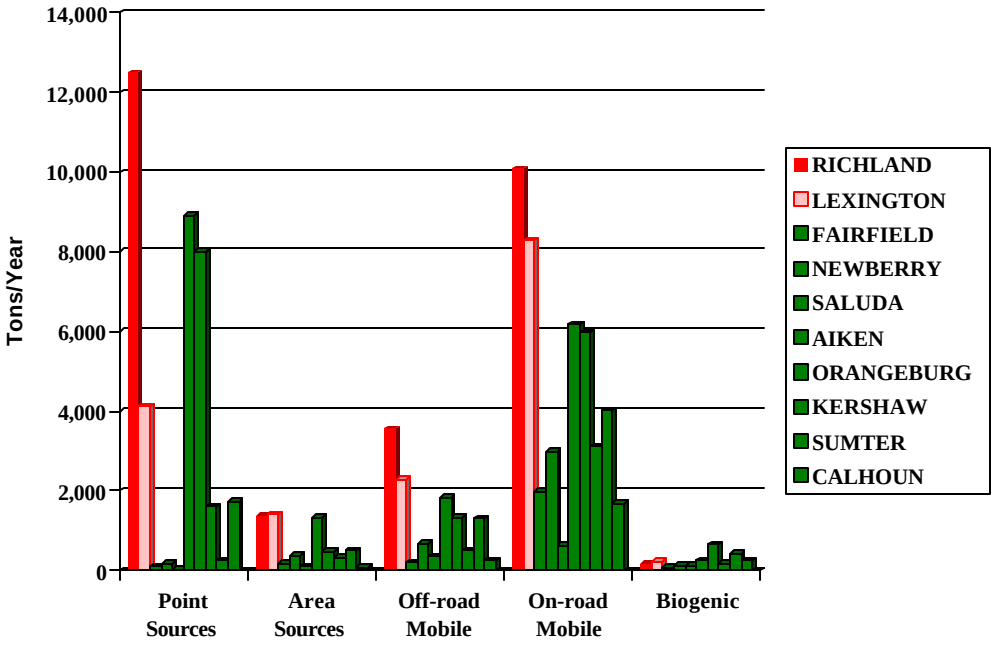
The South Carolina Department of Health and Environmental Control (Department) recommends that the area within Richland and Lexington Counties encompassed by the boundaries of the Columbia Metropolitan Planning Organization (MPO) be designated a nonattainment area for violating the 8-hour ozone National Ambient Air Quality Standard (air quality standard) based on 2000 through 2002 monitoring data. This recommended area will be referred to as the Columbia Nonattainment Area throughout the rest of this document.

The Columbia Nonattainment Area proposed boundary captures 92% of the population in Richland and Lexington Counties. The portions of these two counties not captured within the boundary are rural in nature. The recommended boundary captures 28% of the $NO_x$ point source emissions and 84% of the VOC point source emissions. However, the two largest point sources in Richland County, which are located outside the recommended boundary, are subject to the $NO_x$ SIP Call. One will have a 2004 ozone season $NO_x$ budget of 1674 tons and the other an estimated 2004 ozone season emissions of 912 tons. The proposed boundary captures 96% of the daily vehicle miles traveled in the two counties and it is estimated that in 2025 the boundary will capture 93%. There are three monitors in Richland County, two of which are captured within the boundary. One of these monitors currently indicates nonattainment of the 8-hour ozone standard. The other has only two year of data. One monitor in Richland County indicates attainment with the standard and is not included in the recommended boundary. Also, between 2000 and 2002, the Department operated an ozone monitor in eastern Aiken County to assess conditions between Aiken and Columbia, South Carolina. This monitor was located approximately 20 miles from the Lexington County line. This monitor indicated attainment of the ozone standard and further supports the recommendation of the proposed boundary.

The Department is submitting this document to provide detailed information pertaining to the factors which EPA suggested be addressed in support of any nonattainment area designation recommendations.

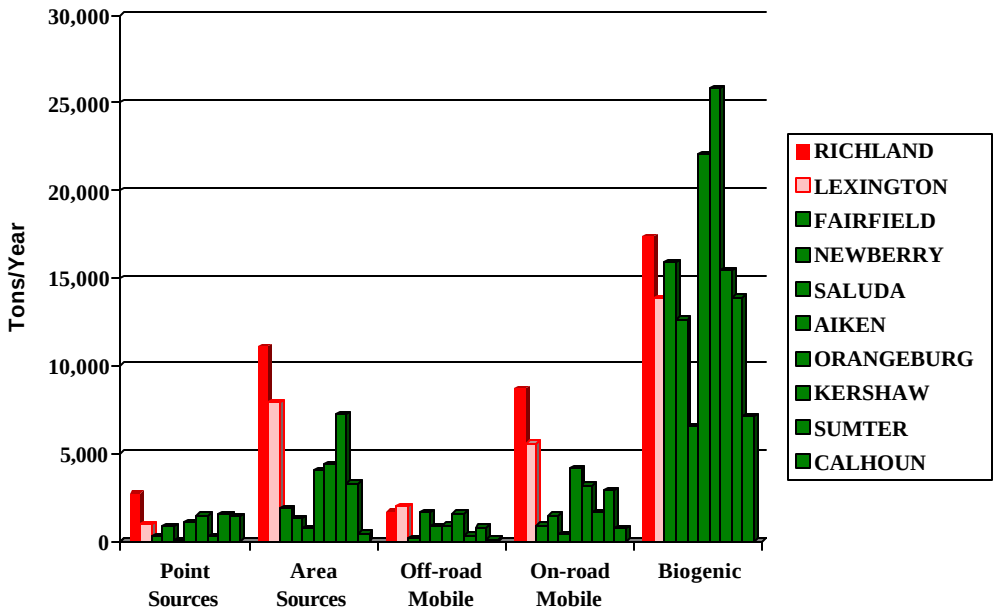
## A. Emissions and Air Quality in Adjacent Areas (Including Adjacent MSAs)

**Figure A-1: NOx Sources for Richland, Lexington and Adjacent Counties***




*** Order of bars corresponds with order of counties in legend.**

**Figure A-2: VOC Sources for Richland, Lexington and Adjacent Counties***




*** Order of bars corresponds with order of counties in legend.**

To evaluate the emissions in Richland and Lexington Counties and the adjacent areas, South Carolina utilized the estimated annual 1999 oxides of nitrogen ($NO_x$) and volatile organic compounds (VOC) emissions. The types of $NO_x$ and VOC emission sources that were evaluated include point, area, biogenic, and on-road and off-road mobile sources. Figures A-1 and A-2 show the percentage of emissions from each source category for Richland, Lexington, and surrounding South Carolina Counties. Additional emissions inventory information is provided in Section D.

The Department has two ozone monitoring sites in the Columbia Nonattainment Area with three years of data. Richland and Lexington Counties are both part of the Columbia MSA. Air quality information is provided in Section C.

## B. Population Density and Degree of Urbanization Including Commercial Development (Significant Difference from Surrounding Areas)

According to the US Census, urban is defined as all territory, population, and housing units in urbanized areas and urban clusters. An urbanized area is defined as a densely settled area that has a census population of at least 50,000, and an urban cluster is defined as a densely settled area that has a census population of 2,500 to 49,999. An urban area is a generic term that refers to both urbanized areas and urban clusters. Rural is defined as all territory, population, and housing units located outside of urbanized areas and urban clusters.

Richland County is 756 square miles and had a population of 320,677 in 2000. The current population density is 424.2 persons per square mile. The majority of Richland County's population is urban as 87.2% of Richland County residents live in the urbanized area. The Richland County portion of the

Recommended Area is 581.2 square miles and has a population of 313,253 people, or 97% of the county total. The population density of the recommended area is 539.0 persons per square mile.

The Richland County portion of the Columbia Nonattainment Area is 581.2 square miles and has a population of 313,253 people, or 97% of the county total. The population density of the recommended area is 539.0 persons per square mile.

Lexington County is 699 square miles and had a population of 216,014 in 2000. The current population density is 309 persons per square mile, and 66.3% of Lexington County's population lives inside an urban area.

The Lexington County portion of the Columbia Nonattainment Area is 415 square miles, or 59.4% of the total county land area. The Lexington County portion of the boundary captures 84% of the total county population and has a population density of 437.2 persons per square mile.

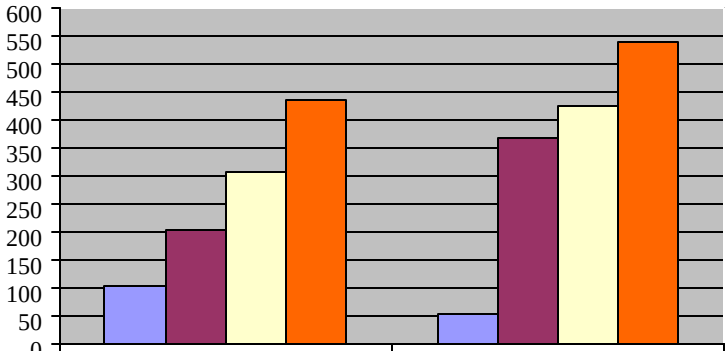
Table B-1 contains population data for Lexington and Richland Counties and their portions of the Columbia Nonattainment Area.

**Table B-1:**
**Total Population, Land Area, and Urban/Rural Population, 2000**

| | Lexington | | Richland | |
|---|---|---|---|---|
| | County | Recommended Portion | County | Recommended Portion |
| Population[1] | 216,014 | 181,265 | 320,677 | 313,253 |
| Land Area (Square Miles)[1] | 699 | 414.6 | 756 | 581.2 |
| Persons per Square Mile [1] | 309.0 | 437.2 | 424.2 | 539.0 |
| Urban Population[2] | 143,177 | Unknown at this time | 279,512 | Unknown at this time |
| % Urban Population [2] | 66.3% | Unknown at this time | 87.2% | Unknown at this time |
| Rural Population [2] | 72,837 | Unknown at this time | 41,165 | Unknown at this time |
| % Rural Population [2] | 33.7% | Unknown at this time | 12.8% | Unknown at this time |

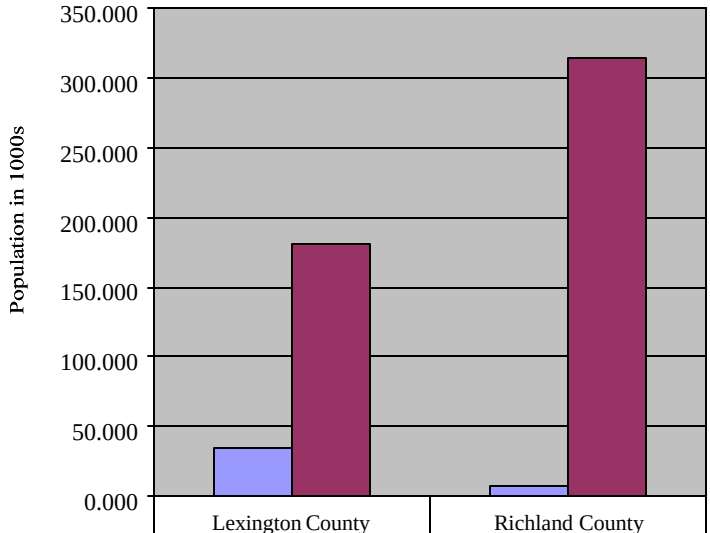
[1] Data provided by the US Census: 2000. Data for the recommended area was obtained from the SCDOT.
[2] Data provided by the SC Office of Research and Statistics.

**Figure B-1: Population Density, 2000**
**(Persons per Square Mile)**



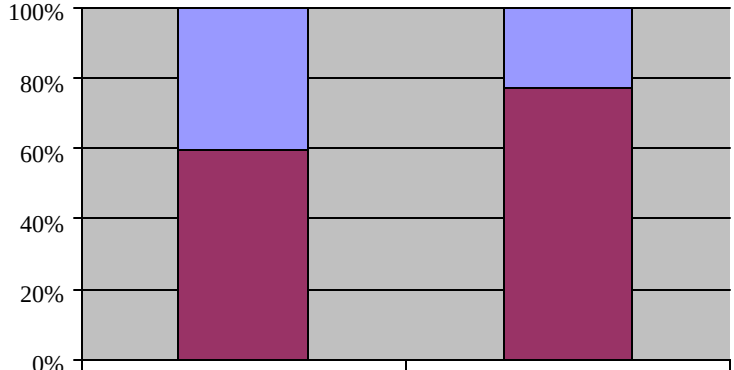

| | Lexington | Richland |
|---|---|---|
| County Rural Persons per Sq. Mi. | 104.1 | 54.3 |
| County Urban Persons per Sq. Mi. | 204.9 | 369.9 |
| Total County Persons per Sq. Mi. | 309.0 | 424.2 |
| Recmmended Area Persons per Sq. Mi. | 437.2 | 539.0 |

**Figure B-2: Population Distribution**
**relative to Recommended Area Boundaries, 2000**




| | Lexington County | Richland County |
|---|---|---|
| Outside Boundary | 34.749 | 7.424 |
| Inside Boundary | 181.265 | 313.677 |

**Figure B-3: Land Area Distribution according to Recommended Area Boundaries, 2000**




| | Lexington County | Richland County |
|---|---|---|
| Non-Recommended Area Land Area in Sq. Mi. | 284.4 | 174.8 |
| Recommended Area Land Area in Sq. Mi. | 414.6 | 581.2 |

Figures B-1, B-2, and B-3 show the population density distribution, land area distribution, and population distribution, respectively, for Lexington and Richland Counties relative to the Columbia Nonattainment Area.

According to the US Census, manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction. Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included. The retail trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

The Columbia Nonattainment Area contains a large majority of the economic development in Lexington and Richland Counties. It is estimated that Richland and Lexington Counties have over 98% and 86% of its manufacturing establishments located inside the recommended area boundary, respectively. About 29,322 people work in manufacturing in the two-county area, and 26,696 of those people, or about 91.04%, work inside the recommended area boundary. The concentrated urban area also supports retail trade. The number of employees working in retail in the counties combined equals 34,192 at some 2,384 retail trade establishments throughout the two counties. It is reasonable to assume that the boundary contains the majority of the retail business, particularly since the metropolitan areas of Lexington and Richland County are captured and those areas assumedly compose an elevated extent of the retail employees and trade.

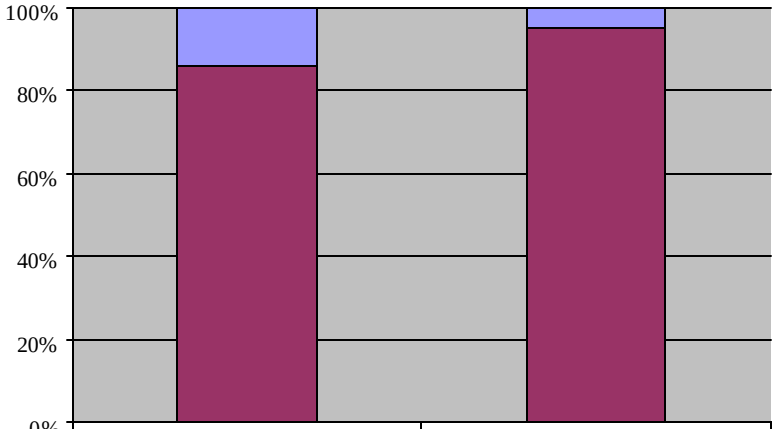
| | Table B-2: Total Number of Manufacturing Employees, 2000[3] | | |
|---|---|---|---|
| | In Recommended Area Boundary | In County Boundary | Percent in Recommended Area Boundary |
| Lexington | 10,817 | 12,587 | 85.94% |
| Richland | 15,879 | 16,735 | 94.88% |
| **Total** | **26,696** | **29,322** | **91.04%** |

| | Table B-3: Total Number of Manufacturing Establishments, 2000 [3] | | |
|---|---|---|---|
| | In Recommended Area Boundary | In County Boundary | Percent in Recommended Area Boundary |
| Lexington | 154 | 179 | 86.03% |
| Richland | 205 | 209 | 98.09% |
| **Total** | **359** | **388** | **92.53%** |

| | Table B-4: Retail Trade Patterns, 2000[4] | |
|---|---|---|
| | Number of Employees | Number of Establishments |
| Lexington County | 11,354 | 843 |
| Richland County | 22,838 | 1,541 |
| **Total** | **34,192** | **2,384** |

[3] Data from Bureau of Air Quality "SC Company File1.xls," based on 2001.
[4] Data provided by US Census: 2000.

**Figure B-4: Distribution of Manufacturing Employees, 2000**




| | Lexington County | Richland County |
|---|---|---|
| Outside Recommended Area | 1,770 | 856 |
| Inside Recommended Area | 10,817 | 15,879 |

## C. Monitoring Data Representing Ozone Concentrations in Local Areas and Larger Areas (urban or regional scale)

The Columbia Nonattainment Area Map (Figure 1) shows the ozone monitoring stations in the Columbia Nonattainment Area and vicinity. There are currently three ozone monitors in Richland County. Data from two of the monitors and a nearby monitor in Aiken County were used for this boundary determination. The first Richland County ozone monitoring station (Parklane 45-079-0007) is located within the Columbia Nonattainment Area. It is in a suburban area across a four-lane street from residential zoning. The site was established in 1980 and is approximately 110 meters above sea level. It is near to State Park Health Center and located in a field between Parklane Road and Counts Road, behind the SC Archives and History complex. The surrounding area has business parks, small businesses, housing, and apartment complexes. Parklane Road is heavily congested during business hours. This is due to its proximity of the intersections with Farrow Road (SC 555), Two Notch Road (US 1), and the SC-277 / I-77 interchange. The monitoring objective for Parklane site is to measure maximum ozone concentrations.

The second Richland County ozone monitoring station (Congaree Bluff 45-079-0021) has replaced the Congaree Swamp (45-079-1006) station. Congaree Bluff is located in a rural area off of South Cedar Creek Road within the Congaree Swamp National Monument. The Congaree Swamp National Monument is located within the Cedar Creek flood plain. The area surrounding the monitoring station is forest, and is approximately 100 meters within the Congaree Swamp National Monument boundary. This monitoring site is approximately 34 meters above sea level and has been relocated to this less frequently flooded area to ensure reliable access to the site. The monitoring objective for Congaree Bluff site is to measure ozone concentrations for general background. The monitor is not within the Columbia Nonattainment Area and it indicates attainment with the 8-hour ozone standard.

Another Richland County ozone monitoring station (Sandhill #2 45-079-1002) was located within the Columbia Nonattainment Area. It is in a rural setting on agricultural land. In early 2002 Sandhill #2 was replaced with the Sandhill Experiment Station (45-079-1001) air monitor. Due to its relocation during the current three year period, data gathered from the site cannot be considered when making boundary recommendations. It was moved approximately 715 meters from the old site and it is 134 meters above sea level. The surrounding area was recently developed to residential use with elementary and middle schools built within the community. The main roads that lead to the site are US 1 and Clemson Road. According to SCDOT traffic count data for the year 2000 shows that more than 13,000 vehicles per day use both of these roads. The area has recently become rather populated and Clemson Road has expanded from a two-lane road to a four-lane road. An overpass over US 1 was constructed to gain easier access to US 1 and I-20. The monitoring objective for Sandhill #2 was to measure ozone concentrations for upwind background. The monitoring objective for Sandhill Experimental Station is to measure ozone concentrations for upwind background.

The Aiken County ozone monitoring station (Wagener DOT 45-003-0004) was a short-term special study monitor to determine the gradient difference between Richland and Aiken Counties. The Wagener DOT was located in northern Aiken County approximately 20 miles from the Lexington County line. The monitor was established in August, 2000 and ran until November, 2002. It was surrounded by agricultural land and sat approximately 138 meters above sea level. According to SCDOT traffic count data for the year 2000 shows 100 vehicles per day access the road. The monitoring objective for this site was to measure ozone concentrations for general/background. The monitor indicated attainment with the 8-hour ozone standard and justifies the Department's recommendation of designating partial Lexington County.

Table C-1 presents the 2000 through 2002 8-hour ozone monitoring data for Richland and Aiken Counties. The design value is the annual fourth-highest daily maximum 8-hour ozone concentration, expressed in parts per million (ppm), averaged over three consecutive years. Since the 2002 ozone design value for the Parklane monitoring site is 0.087 ppm, the site is marginally exceeding the 8-hour ozone standard.

**Table C-1:**
**Richland County and Surrounding Area Ozone Monitoring Data**

| County | Site ID | Site Name | 4th Maximum 8-Hour | | | Design Value |
|---|---|---|---|---|---|---|
| | | | 2000 | 2001 | 2002 | |
| Richland | 45-079-0007 | Parklane - State Park Health Ctr | 0.096 | 0.082 | 0.084 | 0.087 |
| Richland | 45-079-0021 | Congaree Bluff | 0.073 | 0.076 | 0.082 | 0.077 |
| Richland | 45-079-1001 | Sandhills Experiment Station | | | 0.093 | N/A |
| Richland | 45-079-1002 | Sandhill #2 | 0.097 | 0.091 | | N/A |
| Richland | 45-079-1006 | Congaree Swamp | 0.073 | | | N/A |
| Aiken | 45-003-0004 | Wagener DOT | 0.079 | 0.077 | 0.094 | 0.083 |

Table C-2 contains the previous three years daily maximum ozone concentrations above 0.084 ppm for Parklane, Congaree Bluff, and Wagener DOT. A period indicates that no exceedance occurred on the same day at that location.

| Table C-2: Parklane, Congaree Bluff and Wagener DOT Sites | | | |
|---|---|---|---|
| Date of Exceedance | Richland Parklane Daily Maximum 8-hour Average ppm | Richland Congaree Bluff Daily Maximum 8-hour Average ppm | Aiken Wagener DOT Daily Maximum 8-hour Average ppm |
| 05/11/2000 | 0.1 | . | . |
| 06/01/2000 | 0.088 | . | . |
| 06/02/2000 | 0.099 | 0.091 | . |
| 06/03/2000 | 0.096 | . | . |
| 07/01/2000 | 0.085 | . | . |
| 07/13/2000 | . | . | . |
| 07/18/2000 | 0.09 | . | . |
| 07/19/2000 | 0.096 | . | . |
| 07/21/2000 | . | . | . |
| 08/15/2000 | . | . | . |
| 08/17/2000 | . | . | . |
| 08/18/2000 | 0.096 | . | . |
| **2000 Total Hits** | **8** | **1** | **0** |
| 05/01/2001 | . | . | . |
| 05/05/2001 | . | . | . |
| 05/06/2001 | . | . | . |
| 05/16/2001 | 0.086 | 0.092 | . |
| 05/17/2001 | . | . | 0.089 |
| 05/31/2001 | . | . | 0.085 |
| 07/17/2001 | 0.09 | . | . |
| 07/19/2001 | . | . | . |
| 08/23/2001 | 0.091 | . | . |
| 09/18/2001 | . | . | . |
| **2001 Total Hits** | **3** | **1** | **2** |

| Table C-2: Parklane, Congaree Bluff and Wagener DOT Sites | | | |
|---|---|---|---|
| Date of Exceedance | Richland Parklane Daily Maximum 8-hour Average ppm | Richland Congaree Bluff Daily Maximum 8-hour Average ppm | Aiken Wagener DOT Daily Maximum 8-hour Average ppm |
| 05/25/2002 | . | . | . |
| 06/03/2002 | . | . | 0.089 |
| 06/04/2002 | . | . | . |
| 06/10/2002 | . | . | 0.089 |
| 06/11/2002 | 0.087 | . | 0.089 |
| 06/12/2002 | . | . | . |
| 06/13/2002 | 0.093 | . | 0.099 |
| 07/02/2002 | . | . | . |
| 07/03/2002 | . | . | . |
| 07/04/2002 | . | . | . |
| 07/05/2002 | . | 0.087 | . |
| 07/06/2002 | . | . | . |
| 07/08/2002 | . | . | 0.085 |
| 07/16/2002 | . | . | . |
| 07/17/2002 | . | 0.094 | 0.091 |
| 07/18/2002 | . | . | . |
| 08/02/2002 | . | . | . |
| 09/11/2002 | 0.086 | 0.086 | 0.092 |
| **2002 Total Hits** | **3** | **3** | **7** |

## D. Location of Emission Sources

Table D-1 lists the $NO_x$ point sources that are in operation Lexington and Richland Counties based on the 1999 $NO_x$ and VOC emissions inventory i-Steps data. Lexington County has 22 $NO_x$ point sources in operation and 19 are located within the nonattainment area. Richland County has 34 $NO_x$ point sources in operation and 31 are located within the nonattainment area. Facilities in Red are within the proposed boundary; facilities in Black are outside the proposed boundary.

| Table D- 1: Lexington & Richland Counties Point Source NO2 Emissions | | | | |
|---|---|---|---|---|
| **County** | **Plant Name** | **Permit Number** | **Pollutant** | **Point Source-NO2 (Tons Per Year)** |
| Lexington | BC Components | 1560-0054 | NO2 | 6.71 |
| Lexington | Boral Bricks: Lexington | 1560-0006 | NO2 | 15.10 |
| Lexington | Columbia Farms: Sunset Blvd | 1560-0121 | NO2 | 2.34 |
| Lexington | Columbia Silica Sand | 1560-0037 | NO2 | 0.52 |
| Lexington | Corley & Sons Sawmill | 1560-0068 | NO2 | 7.35 |
| Lexington | Fosterdixiana: Quarry | 1560-0038 | NO2 | 3.02 |
| Lexington | Hardaway: Plant #14 | 9900-0161 | NO2 | 0.00 |
| Lexington | Honeywell: Columbia | 1560-0016 | NO2 | 60.84 |
| Lexington | Icon Identity Solutions | 1560-0131 | NO2 | 0.00 |
| Lexington | KMS Inc | 1560-0073 | NO2 | 0.30 |
| Lexington | Lanier Construction: Gaston Asphalt | 9900-0035 | NO2 | 1.20 |
| Lexington | Lexington Medical Center: West Columbia | 1560-0055 | NO2 | 12.93 |
| Lexington | Martin, JB | 1560-0095 | NO2 | 10.89 |
| Lexington | Michelin: Lexington US5 | 1560-0042 | NO2 | 44.41 |
| Lexington | Nucor Building Systems | 1560-0109 | NO2 | 0.32 |
| Lexington | Rea Construction: Plant 51 | 9900-0083 | NO2 | 4.93 |
| Lexington | Safety Kleen: Lexington | 1560-0039 | NO2 | 2.19 |
| Lexington | SCE&G: McMeekin | 1560-0003 | NO2 | 3,825.87 |
| Lexington | Sloan Construction: #16 | 9900-0060 | NO2 | 2.93 |
| Lexington | SMI Steel SC | 1560-0087 | NO2 | 127.04 |
| Lexington | TCM Mfg USA Inc | 1560-0086 | NO2 | 0.85 |
| Lexington | US Silica | 1560-0005 | NO2 | 4.30 |
| | **1999 Lexington Co Total** | | | **4,134.04** |
| | **Emissions in Nonattainment Area-Total** | | | **4,121.63** |
| | **Emissions in Nonattainment Area-Percent** | | | **99.7%** |
| | | | | |
| Richland | American Italian Pasta Co | 1900-0130 | NO2 | 3.90 |
| Richland | American Spiralweld Pipe | 1900-0179 | NO2 | 0.14 |
| Richland | Carolina Ceramics | 1900-0007 | NO2 | 10.35 |
| Richland | Casco Impregnated Papers | 1900-0093 | NO2 | 5.05 |
| Richland | Central Products Co DBA IPG Group | 1900-0033 | NO2 | 37.42 |
| Richland | Circle Environmental: Columbia | 1900-0164 | NO2 | 0.05 |
| Richland | Colprovia Asphalt #1 | 9900-0025 | NO2 | 0.51 |
| Richland | Columbia State Farmers Market | 1900-0103 | NO2 | 0.04 |
| Richland | Consolidated Systems | 1900-0040 | NO2 | 9.44 |
| Richland | Dimas North America | 1900-0082 | NO2 | 0.00 |
| Richland | FN Manufacturing | 1900-0052 | NO2 | 1.02 |
| Richland | Hueck Foils LLC | 1900-0146 | NO2 | 0.61 |
| Richland | International Paper: Eastover | 1900-0046 | NO2 | 1,031.29 |
| Richland | Jackson, CR:Asphalt | 9900-0036 | NO2 | 3.83 |
| Richland | Palmetto Baptist Medical Center: Columbia | 1900-0044 | NO2 | 0.51 |
| Richland | Palmetto Richland Memorial Hospital | 1900-0062 | NO2 | 10.14 |
| Richland | Plasti-Line Columbia | 1900-0169 | NO2 | 0.33 |

| Table D- 1: Lexington & Richland Counties Point Source NO2 Emissions | | | | |
|---|---|---|---|---|
| **County** | **Plant Name** | **Permit Number** | **Pollutant** | **Point Source-NO2 (Tons Per Year)** |
| Richland | Rea Construction: Plant 52 | 9900-0081 | NO2 | 5.44 |
| Richland | Ready Mixed Concrete: Columbia | 1900-0098 | NO2 | 0.00 |
| Richland | Richland Landfill | 1900-0148 | NO2 | 13.40 |
| Richland | Richtex Brick: Columbia | 1900-0010 | NO2 | 66.41 |
| Richland | SC DMH: Bull St | 1900-0055 | NO2 | 12.22 |
| Richland | SC General Services: Columbia Mills | 1900-0161 | NO2 | 1.80 |
| Richland | SC General Services: Energy Facility | 1900-0162 | NO2 | 2.36 |
| Richland | SC General Services: Haynes | 1900-0109 | NO2 | 1.24 |
| Richland | SC General Services: Sims/Aycock | 1900-0104 | NO2 | 0.43 |
| Richland | SCE&G: Coit | 1900-0132 | NO2 | 5.37 |
| Richland | SCE&G: Wateree | 1900-0013 | NO2 | 10,368.25 |
| Richland | Shakespeare: Columbia | 1900-0036 | NO2 | 2.87 |
| Richland | Sloan Construction: # 7 | 9900-0055 | NO2 | 8.22 |
| Richland | Tyler Inc | 1900-0133 | NO2 | 0.07 |
| Richland | US Army: Ft Jackson | 1900-0016 | NO2 | 22.31 |
| Richland | US VA Hospital: Columbia | 1900-0023 | NO2 | 9.76 |
| Richland | USC: Columbia Campus Energy Facility | 1900-0143 | NO2 | 33.76 |
| | **1999 Richland Co Total** | | | **11,668.54** |
| | **Emissions in Nonattainment Area-Total** | | | **255.60** |
| | **Emissions in Nonattainment Area-Percent** | | | **2.2%** |

*There are two major $NO_x$ sources in Richland County that are subject to the $NO_x$ SIP Call, International Paper: Eastover and SCE&G: Wateree. International Paper: Eastover has an estimated 2004 ozone season $NO_x$ budget of 912 tons. SCE&G: Wateree has a 2004 ozone season $NO_x$ budget of 1674 tons. Lexington County has one major $NO_x$ source that is subject to the $NO_x$ SIP Call, SCE&G: McMeekin. It has a 2004 ozone season $NO_x$ budget of 704 tons.*

Table D-2 lists the VOC point sources that are in operation in Lexington and Richland Counties based on the 1999 $NO_x$ and VOC emissions inventory iSteps data. Lexington County has 27 VOC point sources and 24 are located within the nonattainment area. Richland County has 36 VOC point sources in operation and 33 are located within the nonattainment area.

| Table D- 1: Lexington & Richland Counties Point Source VOC Emissions | | | | |
|---|---|---|---|---|
| **County** | **Plant Name** | **Permit Number** | **Pollutant** | **Point Source-VOC (Tons Per Year)** |
| Lexington | BC Components | 1560-0054 | VOC | 8.87 |
| Lexington | Boral Bricks: Lexington | 1560-0006 | VOC | 2.33 |
| Lexington | Columbia Farms: Sunset Blvd | 1560-0121 | VOC | 0.12 |
| Lexington | Columbia Silica Sand | 1560-0037 | VOC | 0.01 |
| Lexington | Corley & Sons Sawmill | 1560-0068 | VOC | 6.14 |
| Lexington | Eagle Aviation Inc | 1560-0082 | VOC | 9.12 |
| Lexington | Fosterdixiana: Quarry | 1560-0038 | VOC | 0.05 |

| Table D-1: Lexington & Richland Counties Point Source VOC Emissions | | | | |
|---|---|---|---|---|
| **County** | **Plant Name** | **Permit Number** | **Pollutant** | **Point Source-VOC (Tons Per Year)** |
| Lexington | Hardaway: Plant #14 | 9900-0161 | VOC | 0.00 |
| Lexington | Honeywell: Columbia | 1560-0016 | VOC | 93.23 |
| Lexington | Icon Identity Solutions | 1560-0131 | VOC | 6.58 |
| Lexington | Kline Iron & Steel: Cayce | 1560-0102 | VOC | 24.67 |
| Lexington | KMS Inc | 1560-0073 | VOC | 21.64 |
| Lexington | Lanier Construction: Gaston Asphalt | 9900-0035 | VOC | 0.03 |
| Lexington | Lexington Medical Center: West Columbia | 1560-0055 | VOC | 0.23 |
| Lexington | Martin, JB | 1560-0095 | VOC | 0.18 |
| Lexington | Michelin: Lexington US5 | 1560-0042 | VOC | 418.72 |
| Lexington | Michelin: Lexington US7 | 1560-0113 | VOC | 66.71 |
| Lexington | Nucor Building Systems | 1560-0109 | VOC | 20.12 |
| Lexington | Rea Construction: Plant 51 | 9900-0083 | VOC | 0.06 |
| Lexington | Safety Kleen: Lexington | 1560-0039 | VOC | 13.15 |
| Lexington | SCE&G: McMeekin | 1560-0003 | VOC | 19.48 |
| Lexington | Sea Hunt Boat | 1560-0117 | VOC | 23.66 |
| Lexington | Sloan Construction: #16 | 9900-0060 | VOC | 0.03 |
| Lexington | SMI Joist: Cayce | 1560-0116 | VOC | 163.99 |
| Lexington | SMI Steel SC | 1560-0087 | VOC | 58.71 |
| Lexington | TCM Mfg USA Inc | 1560-0086 | VOC | 17.33 |
| Lexington | US Silica | 1560-0005 | VOC | 0.23 |
| | **1999 Lexington Co Total** | | | **975.39** |
| | **Emissions in Nonattainment Area-Total** | | | **955.06** |
| | **Emissions in Nonattainment Area-Percent** | | | **97.9%** |
| | | | | |
| Richland | American Italian Pasta Co | 1900-0130 | VOC | 0.07 |
| Richland | American Spiralweld Pipe | 1900-0179 | VOC | 4.70 |
| Richland | Aratex Services | 1900-0125 | VOC | 0.00 |
| Richland | Ashland Chemical: Columbia | 1900-0045 | VOC | 0.00 |
| Richland | Carolina Ceramics | 1900-0007 | VOC | 0.71 |
| Richland | Casco Impregnated Papers | 1900-0093 | VOC | 30.88 |
| Richland | Central Products Co DBA IPG Group | 1900-0033 | VOC | 1,148.94 |
| Richland | Circle Environmental: Columbia | 1900-0164 | VOC | 0.00 |
| Richland | Colprovia Asphalt #1 | 9900-0025 | VOC | 0.01 |
| Richland | Consolidated Systems | 1900-0040 | VOC | 39.04 |
| Richland | Dimas North America | 1900-0082 | VOC | 10.51 |
| Richland | FN Manufacturing | 1900-0052 | VOC | 19.31 |
| Richland | Hueck Foils LLC | 1900-0146 | VOC | 7.38 |
| Richland | International Paper: Eastover | 1900-0046 | VOC | 359.56 |
| Richland | Jackson, CR: Asphalt | 9900-0036 | VOC | 0.09 |
| Richland | Kline Iron & Steel: Columbia | 1900-0038 | VOC | 23.47 |
| Richland | Palmetto Baptist Medical Center: Columbia | 1900-0044 | VOC | 0.03 |
| Richland | Palmetto Richland Memorial Hospital | 1900-0062 | VOC | 0.20 |
| Richland | Plasti-Line Columbia | 1900-0169 | VOC | 39.81 |
| Richland | Rea Construction: Plant 52 | 9900-0081 | VOC | 0.03 |

| Table D-1: Lexington & Richland Counties Point Source VOC Emissions | | | | |
|---|---|---|---|---|
| **County** | **Plant Name** | **Permit Number** | **Pollutant** | **Point Source-VOC (Tons Per Year)** |
| Richland | Ready Mixed Concrete: Columbia | 1900-0098 | VOC | 0.00 |
| Richland | Richland Landfill | 1900-0148 | VOC | 3.79 |
| Richland | Richtex Brick: Columbia | 1900-0010 | VOC | 8.35 |
| Richland | SC DMH: Bull St | 1900-0055 | VOC | 0.24 |
| Richland | SC General Services: Columbia Mills | 1900-0161 | VOC | 0.10 |
| Richland | SC General Services: Energy Facility | 1900-0162 | VOC | 0.13 |
| Richland | SC General Services: Haynes | 1900-0109 | VOC | 0.07 |
| Richland | SC General Services: Sims/Aycock | 1900-0104 | VOC | 0.02 |
| Richland | SCE&G: Coit | 1900-0132 | VOC | 0.01 |
| Richland | SCE&G: Wateree | 1900-0013 | VOC | 53.46 |
| Richland | Shakespeare: Columbia | 1900-0036 | VOC | 8.84 |
| Richland | Sloan Construction: # 7 | 9900-0055 | VOC | 0.06 |
| Richland | SMI Joist: Eastover | 1900-0150 | VOC | 56.77 |
| Richland | Tyler Inc | 1900-0133 | VOC | 6.88 |
| Richland | US Army: Ft Jackson | 1900-0016 | VOC | 4.56 |
| Richland | US VA Hospital: Columbia | 1900-0023 | VOC | 0.71 |
| | **1999 Richland Co Total** | | | **1,829.40** |
| | **Emissions in Nonattainment Area-Total** | | | **1,411.92** |
| | **Emissions in Nonattainment Area-Percent** | | | **77.2%** |

Table D-3 lists the $NO_x$ on-road emissions for Lexington and Richland Counties and Table D-4 lists the VOC on-road emissions.

| Table D-3: Lexington & Richland Counties On-road $NO_x$ Emissions | | | |
|---|---|---|---|
| **County** | **Tier 1** | **Tier 2** | **Highway $NO_x$ (Tons Per Year)** |
| Lexington | 11-Highway Vehicles | 01-Light-Duty Gas Vehicles & Motorcycles | 2,818.00 |
| Lexington | 11-Highway Vehicles | 02-Light-Duty Gas Trucks | 1,554.00 |
| Lexington | 11-Highway Vehicles | 03-Heavy-Duty Gas Vehicles | 409.00 |
| Lexington | 11-Highway Vehicles | 04-Diesels | 3,518.00 |
| | **1999 Lexington Co Total** | | **8,299.00** |
| | | | |
| Richland | 11-Highway Vehicles | 01-Light-Duty Gas Vehicles & Motorcycles | 3,776.00 |
| Richland | 11-Highway Vehicles | 02-Light-Duty Gas Trucks | 2,077.00 |
| Richland | 11-Highway Vehicles | 03-Heavy-Duty Gas Vehicles | 530.00 |
| Richland | 11-Highway Vehicles | 04-Diesels | 3,712.00 |
| | **1999 Richland Co Total** | | **10,095.00** |

| Table D-4: Lexington & Richland Counties On-road VOC Emissions | | | |
|---|---|---|---|
| **County** | **Tier 1** | **Tier 2** | **Highway VOC (Tons Per Year)** |
| Lexington | 11-Highway Vehicles | 01-Light-Duty Gas Vehicles & Motorcycles | 3,155.00 |
| Lexington | 11-Highway Vehicles | 02-Light-Duty Gas Trucks | 1,788.00 |
| Lexington | 11-Highway Vehicles | 03-Heavy-Duty Gas Vehicles | 422.00 |
| Lexington | 11-Highway Vehicles | 04-Diesels | 230.00 |
| | **1999 Lexington Co Total** | | **5,595.00** |
| | | | |
| Richland | 11-Highway Vehicles | 01-Light-Duty Gas Vehicles & Motorcycles | 5,003.00 |
| Richland | 11-Highway Vehicles | 02-Light-Duty Gas Trucks | 2,793.00 |
| Richland | 11-Highway Vehicles | 03-Heavy-Duty Gas Vehicles | 648.00 |
| Richland | 11-Highway Vehicles | 04-Diesels | 290.00 |
| | **1999 Richland Co Total** | | **8,734.00** |

**E. Traffic and Commuting Patterns**

Estimates of the Daily Vehicle Miles Traveled (DVMT) were obtained from the South Carolina Department of Transportation (SCDOT). SCDOT determines current DVMT by multiplying traffic volume (through traffic counts) and lane miles (determined by the Highway Performance Monitoring System) for each particular area. The South Carolina Department of Public Safety, Division of Motor Vehicles, provided motor vehicle registration data. All other data in this section was obtained from the US Census Bureau. All data is based on the year 2000.

Table E-1 shows that the 2000 and 2025 DVMT data for Richland and Lexington Counties and the Columbia Nonattainment Area.

| Table E-1: DVMT for Columbia Nonattainment Area | | | | |
|---|---|---|---|---|
| **County** | **2000 Daily VMT** | **2025 Daily VMT** | **Daily VMT Change (2000-2025)** | **Projected % Annual Change** |
| Lexington | 6,973,149 | 11,535,014 | 4,561,865 | 2.62 |
| Richland | 8,940,822 | 14,147,703 | 5,206,881 | 2.33 |
| County Total | 15,913,971 | 25,682,717 | 9,768,746 | 2.45 |
| Columbia Nonattainment Total[5] | 14,613,688 | 23,925,840 | 9,312,152 | 2.55 |
| % VMT Captured inside Nonattainment Area | 91.83 | 93.16 | | |

Figure 1 shows the Interstates that are located within the Columbia Nonattainment Area. There are three interstates (I-20, I-26 and I-77). I-20 is the major corridor of travel between Aiken and Columbia,

[5] Columbia Nonattainment Area totals based on MPO figures and may reflect an overestimation of the total percent captured by the boundary.

South Carolina; I-26 is the major corridor of travel between Spartanburg and Charleston, South Carolina; and I-77 originates in Columbia, South Carolina, and is the major travel corridor to Rock Hill, South Carolina. Additionally, there are eight other major routes of travel through Lexington and Richland Counties. They include US Highways 601, 1, 76, 378, 176, 178, 321 and 21. There are also numerous State and secondary roads that connect the larger towns.

Table E-2 presents the breakdown by road classifications of DVMT traveled in the Spartanburg Nonattainment Area boundary counties from 2000 and projected through 2025.

| | **Table E-2: DVMT Data for Columbia Nonattainment Area Counties** | | | |
|---|---|---|---|---|
| | **2000** | **Projected 2007** | **Projected 2012** | **Projected 2025** |
| **Richland County** | | | | |
| Rural Interstate (01) | 725,336 | 754,205 | 774,826 | 828,441 |
| Rural Principal Arterial (02) | 420,790 | 456,077 | 474,425 | 539,783 |
| Rural Minor Arterial (03) | 443,596 | 480,795 | 500,137 | 569,038 |
| Rural Major Collector (04) | 536,401 | 581,383 | 604,772 | 688,088 |
| Rural Minor Collector (05) | 40,569 | 43,971 | 45,740 | 52,041 |
| Rural Local (09) | 170,943 | 185,278 | 192,732 | 219,283 |
| Rural Total | 2,337,634 | 2,501,709 | 2,592,633 | 2,896,673 |
| Urban Interstate (11) | 2,774,170 | 3,772,385 | 4,485,395 | 6,339,223 |
| Urban Freeway/Expressway (12) | 288,218 | 312,388 | 324,955 | 369,722 |
| Urban Principal Arterial (13) | 1,266,937 | 1,373,181 | 1,428,424 | 1,625,207 |
| Urban Minor Arterial (14) | 1,378,322 | 1,493,906 | 1,554,006 | 1,768,090 |
| Urban Collector (15) | 591,700 | 641,320 | 667,120 | 759,024 |
| Urban Local (18) | 303,842 | 329,322 | 342,570 | 389,764 |
| Urban Total | 6,603,188 | 7,922,501 | 8,802,471 | 11,251,030 |
| Grand Total DVMT | 8,940,822 | 10,424,210 | 11,395,103 | 14,147,703 |
| **Lexington County** | | | | |
| Rural Interstate (01) | 1,337,570 | 1,775,666 | 2,088,591 | 2,902,198 |
| Rural Principal Arterial (02) | 523,763 | 611,649 | 655,699 | 819,296 |
| Rural Minor Arterial (03) | 694,399 | 810,917 | 869,318 | 1,086,213 |
| Rural Major Collector (04) | 747,862 | 873,351 | 936,248 | 1,169,842 |
| Rural Minor Collector (05) | 73,744 | 86,118 | 92,320 | 115,354 |
| Rural Local (09) | 388,566 | 453,767 | 486,446 | 607,814 |
| Rural Total | 3,765,903 | 4,611,467 | 5,128,623 | 6,700,716 |
| Urban Interstate (11) | 1,277,794 | 1,428,535 | 1,536,207 | 1,816,154 |
| Urban Freeway/Expressway (12) | 38,982 | 45,523 | 48,802 | 60,978 |
| Urban Principal Arterial (13) | 627,562 | 732,865 | 785,645 | 981,663 |
| Urban Minor Arterial (14) | 651,297 | 760,582 | 815,358 | 1,018,790 |
| Urban Collector (15) | 338,872 | 395,733 | 424,234 | 530,080 |
| Urban Local (18) | 272,740 | 318,505 | 341,443 | 426,633 |
| Urban Total | 3,207,246 | 3,681,743 | 3,951,689 | 4,834,298 |
| Grand Total DVMT | 6,973,149 | 8,293,210 | 9,080,311 | 11,535,014 |

Table E-2[6] presents the breakdown by road classifications of DVMT traveled in the Columbia Nonattainment Area counties from 2000 and projected through 2025.

| | Table E-3: Where People Work Who Live in South Carolina | | | |
|---|---|---|---|---|
| | County of Residence | | | |
| County Worked In | Lexington | Richland | Out of State | Grand Total |
| Grand Total | 109,259 | 155,968 | 925 | 266,152 |
| Abbeville | 0 | 15 | | 15 |
| Aiken | 613 | 118 | | 731 |
| Allendale | 30 | 7 | | 37 |
| Anderson | 15 | 10 | | 25 |
| Bamberg | 60 | 55 | | 115 |
| Barnwell | 32 | 9 | | 41 |
| Beaufort | 69 | 72 | | 141 |
| Berkeley | 62 | 36 | | 98 |
| Calhoun | 233 | 121 | | 354 |
| Charleston | 264 | 187 | | 451 |
| Cherokee | 6 | 40 | | 46 |
| Chester | 35 | 36 | | 71 |
| Chesterfield | 0 | 36 | | 36 |
| Clarendon | 11 | 27 | | 38 |
| Colleton | 25 | 6 | | 31 |
| Darlington | 31 | 74 | | 105 |
| Dillon | 0 | 7 | | 7 |
| Dorchester | 14 | 26 | | 40 |
| Edgefield | 75 | 5 | | 80 |
| Fairfield | 535 | 1,447 | | 1,982 |
| Florence | 145 | 107 | | 252 |
| Georgetown | 7 | 11 | | 18 |
| Greenville | 131 | 220 | | 351 |
| Greenwood | 98 | 65 | | 163 |
| Hampton | 1 | 7 | | 8 |
| Horry | 83 | 75 | | 158 |
| Kershaw | 258 | 911 | | 1,169 |
| Lancaster | 178 | 412 | | 590 |
| Laurens | 42 | 37 | | 79 |
| Lee | 8 | 81 | | 89 |
| Lexington | 58,998 | 18,860 | 219 | 78,077 |
| Marion | 0 | 17 | | 17 |
| Marlboro | 0 | 9 | | 9 |
| Newberry | 606 | 694 | | 1,300 |
| Oconee | 31 | 107 | | 138 |
| Orangeburg | 520 | 411 | | 931 |
| Out of State | 1,186 | 1,701 | | 2,887 |
| Pickens | 15 | 20 | | 35 |
| Richland | 44,237 | 129,047 | 706 | 173,990 |
| Saluda | 218 | 43 | | 261 |

[6] Data provided by SCDOT.

| Table E-3: Where People Work Who Live in South Carolina | | | | |
|---|---|---|---|---|
| | County of Residence | | | |
| County Worked In | Lexington | Richland | Out of State | Grand Total |
| Spartanburg | 27 | 118 | | 145 |
| Sumter | 200 | 546 | | 746 |
| Union | 8 | 6 | | 14 |
| Williamsburg | 6 | 10 | | 16 |
| York | 146 | 119 | | 265 |

Table E-3[7] presents the 2000 worker flow data from each of the counties. Some counties that are listed on this table are not being considered for boundary recommendations and are being included on this chart to account for all workers in each county. This table shows that approximately 54% of workers that live in Lexington County work inside the county. Approximately 88% of the workers that work outside the county commute to Richland County. This table also shows that approximately 83% of workers that live in Richland County work inside the county. Approximately 70% of the workers that work outside the county commute to Lexington County.

**Figure E-1: Time Leaving Home to Go to Work for Lexington and Richland Counties**

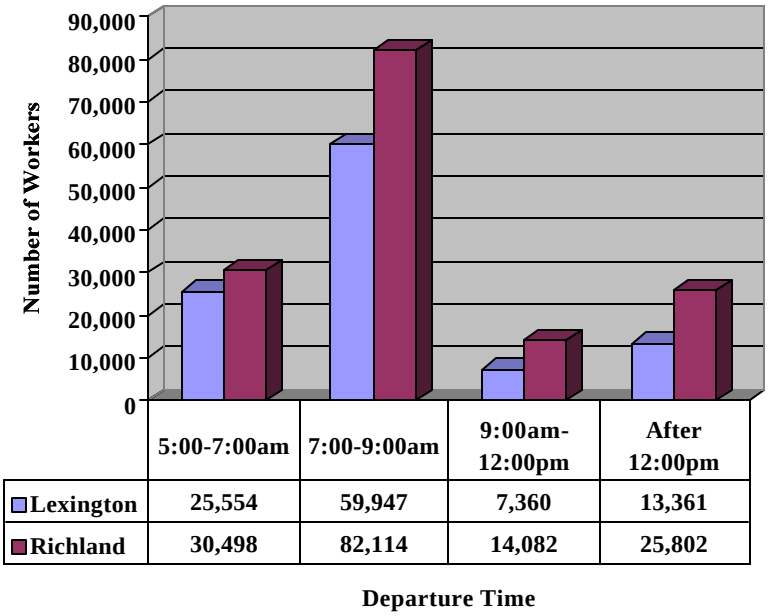
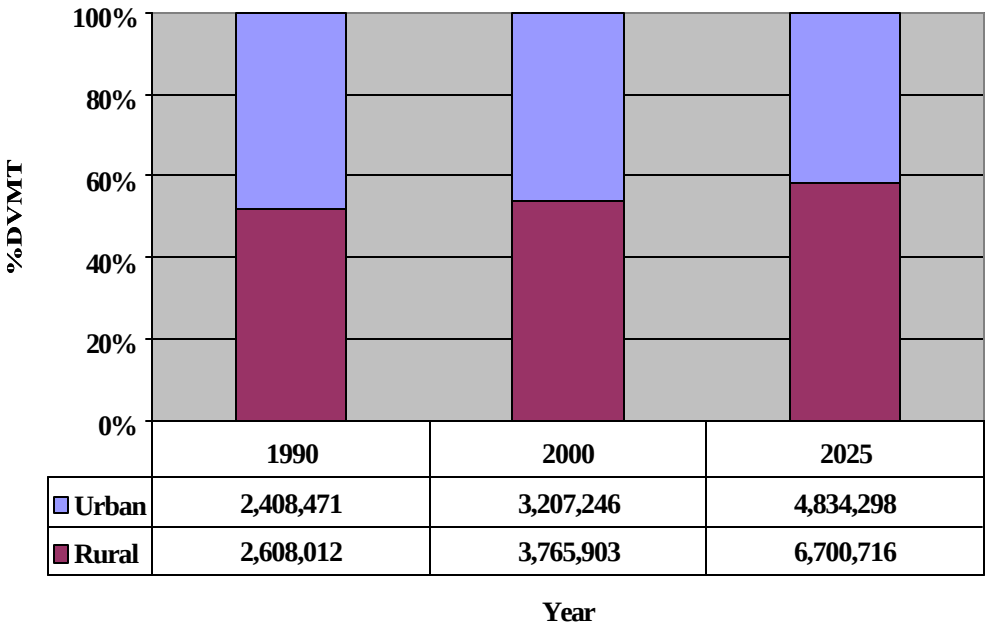



Figure E-1[8] presents the departure times for workers in Lexington and Richland Counties. The figure shows that the largest amount of traffic occurs between 7:00 am to 9:00 am. Note that Richland and Lexington Counties contribute the largest amount of traffic during these times and these two counties

[7] Data provided by US Census: 2000.
[8] Data provided by US Census: 2000.

make up the majority of the landmass of the Columbia Nonattainment Area. It should also be noted that ozone formation is believed to begin during the morning hours and continue throughout the day until sunset in this area. This is important (since the majority of the traffic is contributed from Lexington and Richland Counties and this traffic occurs during the typical start of ozone formation) because it suggests that the mobile source emissions of $NO_x$ and VOC that help contribute to the ozone formation is mainly from the commuters that reside inside the Columbia Nonattainment Area.

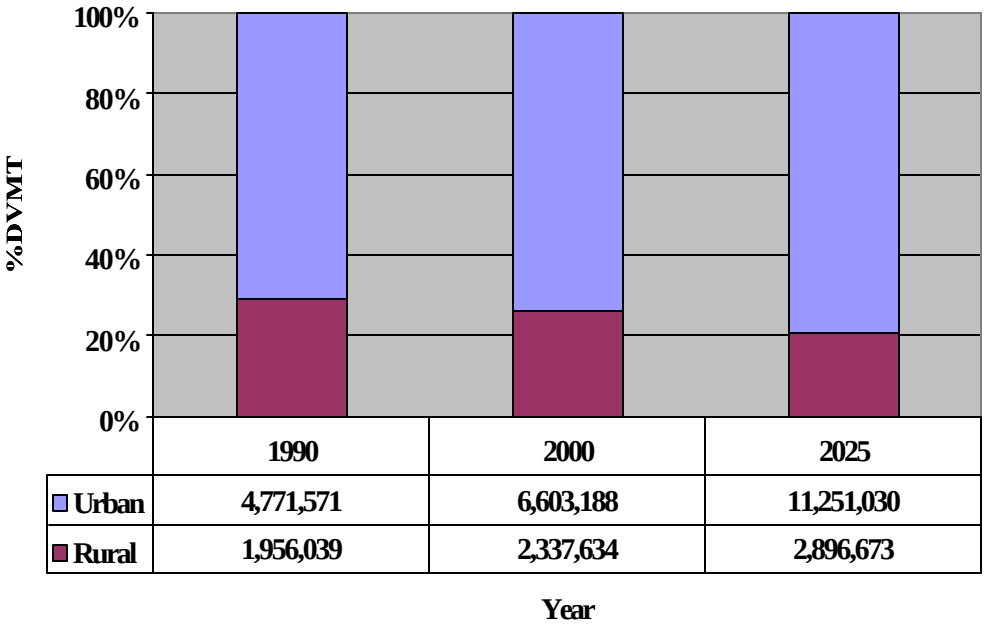
**Figure E-2: Urban vs. Rural DVMT for Lexington County**




Figures E-2[9] and E-3 show that there is a substantial amount of urban DVMT within these counties.

[9] Data provided by US Census: 2000.

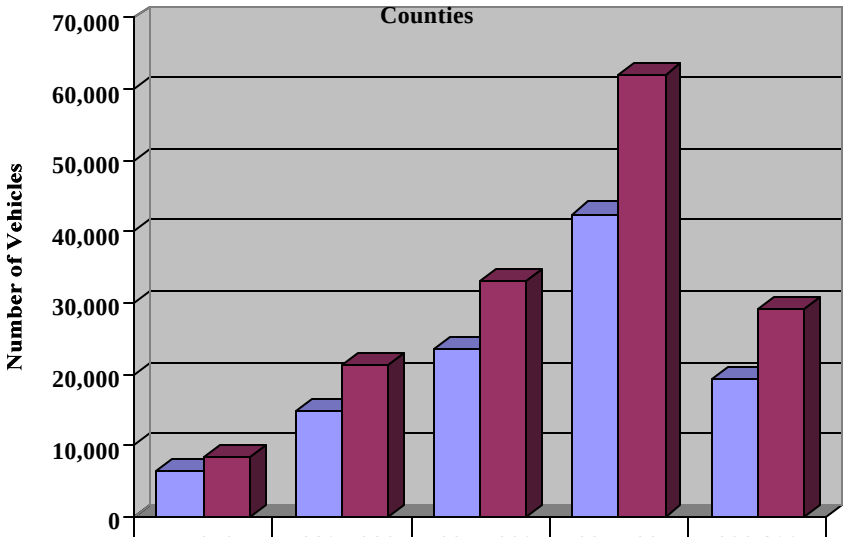
**Figure E-3: Urban vs. Rural DVMT for Richland County**




| | 1990 | 2000 | 2025 |
|---|---|---|---|
| Urban | 4,771,571 | 6,603,188 | 11,251,030 |
| Rural | 1,956,039 | 2,337,634 | 2,896,673 |

Year

**Figure E-4: Motor Vehicle Registration for Lexington and Richland Counties**




| | <1979 | 1980-1986 | 1987-1990 | 1991-1995 | 1996-2001 |
|---|---|---|---|---|---|
| Lexington | 6,320 | 14,779 | 23,616 | 42,499 | 19,291 |
| Richland | 8,338 | 21,373 | 33,144 | 62,005 | 29,203 |

Model Year

Figure E-4[10] presents the motor vehicle registration data for Lexington and Richland Counties. Only a small portion of the vehicles are pre-1981 model years. In 1981 new cars were outfitted with three-way catalysts, on-board computers, and oxygen sensors to help increase the efficiency of the catalytic converters. This figure shows that the majority of cars registered are model years 1991-1995. In 1991 the EPA established lower tailpipe standards for hydrocarbons and nitrogen oxides beginning with 1994 model year vehicles.

This data reflects 2000 registration figures, and many vehicle owners will elect to replace vehicles with newer vehicles in the coming years. These vehicle turnovers, combined with future national low sulfur fuel standards, the use of Onboard Diagnostic (OBD) systems, and Onboard Refueling Vapor Recovery (ORVR) systems will help to offset any potential impacts from the increased emissions from mobile sources in this area.

**F. Expected Growth (Including Extent, Pattern, and Rate of Growth)**

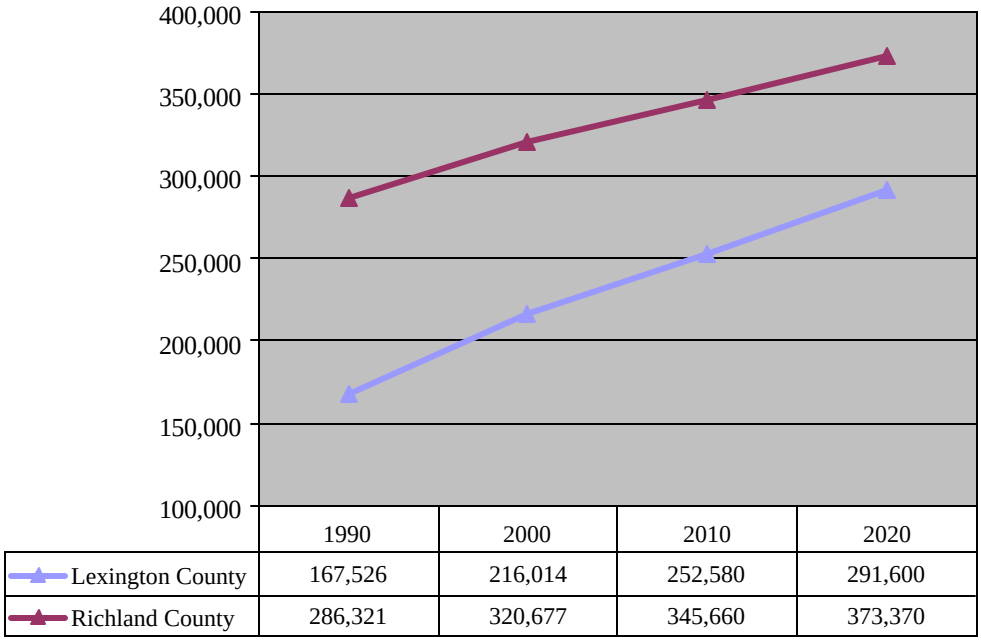
Limited data is available in assessing expected growth for the Columbia Nonattainment Area. Conclusions were drawn based on historical data from 1990, current data from 2000, and population projections for 2020 as contained in Table F-1. Economic growth, relative to population growth, is even harder to predict. No knowledge of major economic expansions is available. While it is certain that population counts will grow, it is only assumed that current economic factors will remain stable or that some economic growth will occur. It is reasonable to expect the majority of that growth to be located inside, or at least near, the Columbia Nonattainment Area.

**Table F-1:**
**Historical and Projected Population and Population Density per County**

| | Lexington County | Richland County |
|---|---|---|
| Population., 1990[11] | 167,526 | 286,321 |
| Population., 2000 [12] | 216,014 | 320,677 |
| Projected Population., 2020[13] | 291,600 | 373,370 |
| Population. Growth Rate, 1990 – 2000 (Persons per 5 Years) | 24,244 | 17,178 |
| Projected Population Growth Rate, 2000 - 2020 (Persons per 5 Years) | 18,896.5 | 13,173.3 |
| Land Area (Sq. Miles) | 699 | 756 |
| Persons per Sq. Mile, 2000 | 309.0 | 424.2 |
| Projected Persons per Sq. Mile, 2020 | 417 | 493.6 |
| Urban Population, 2000 | 143,177 | 279,512 |
| % Urban Population, 2000 | 66.3% | 87.2% |
| Rural Population, 2000 | 72,837 | 41,165 |
| % Rural Population, 2000 | 33.7% | 12.8% |

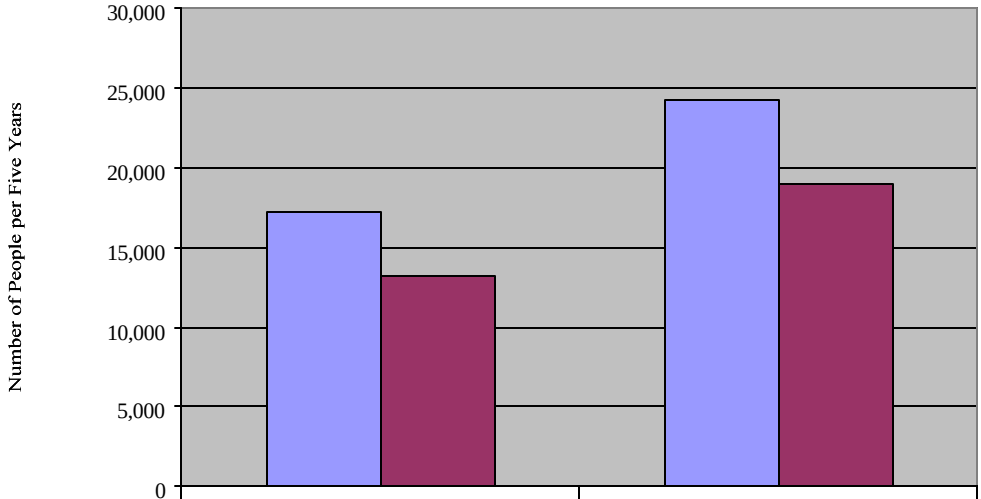
[10] Data provided by South Carolina Department of Public Safety: Division of Motor Vehicles.
[11] Data provided by US Census: 2000.
[12] Data provided by US Census: 2000.
[13] Data provided by US Census: 2000.

**Figure F-1:**
**Population Growth by County, 1990 - 2020**



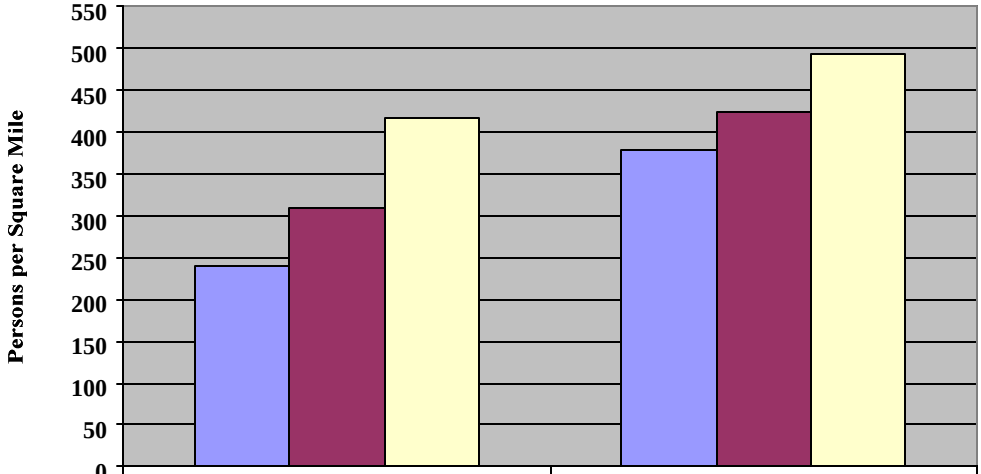

| | 1990 | 2000 | 2010 | 2020 |
|---|---|---|---|---|
| Lexington County | 167,526 | 216,014 | 252,580 | 291,600 |
| Richland County | 286,321 | 320,677 | 345,660 | 373,370 |

**Figure F-2: Rate of**
**Population Growth, 1990 - 2020**




| | Richland County | Lexington County |
|---|---|---|
| 1990 - 2000 | 17,178 | 24,244 |
| 2000 - 2020 | 13,173.30 | 18,896.50 |

**Figure F-3**
**Historical and Projected Population Density**




| | Lexington | Richland |
|---|---|---|
| 1990 | 239.6 | 378.5 |
| 2000 | 308.9 | 423.9 |
| 2020 | 417 | 493.6 |

Figures F-1, F-2, and F-3 show historical and projected data for total population, rate of growth, and population density, respectively, for the counties in the boundary. The expected growth is concentrated in both Lexington and Richland Counties. Since the recommended area includes the majority of Richland and Lexington Counties and already captures the area's urban population, it is reasonable to conclude that the recommended area boundary at least approximates, if not contains, the expected population growth, and hence the economic growth, for the area in the coming years.

It should be noted that trends are based on projected data for 2020. The population will grow in each county; however, comparing the population increase per five years over the last ten years (1990 – 2000) to the projected population increase per five years over the next twenty years (2000 – 2020) shows that the rate of growth slows for all the counties covered by the boundary.

The largest employment sector in Lexington County is retail trade.[14] The second and third largest in Lexington County are manufacturing and accommodations and food services, respectively. The largest employment sector in Richland County is health care and social assistance, and the second largest is the retail trade sector. Administration, support, waste management, and remediation services is the third largest in Richland County. Manufacturing does employ a number of people in Richland County, but it trails service-oriented businesses, such as finance and insurance and accommodations and food services, in the number of employees.

[14] Data provided by US Census: 2000.

## G. Meteorology

See Section V - G of Introduction.

## H. Topography

See Section V - H of Introduction.

## I. Jurisdictional Boundaries

The Columbia Nonattainment Area boundary includes only that portion of the Columbia MPO that is within Richland and Lexington Counties.

Starting point at I-77 at the county line of Richland/Fairfield and follows county line northeast for 9.6 miles to intersection of Richland/Fairfield/Kershaw county lines.

Follows county line of Richland/Kershaw southwest for 6.0 miles and then turns southeast for 11 miles over I-20 and SC 12. Turns northeast for 1.5 miles to US 601 (McCords Ferry Rd).

Follows US 601(McCords Ferry Rd) south for 5.2 miles to SC 262 (Leesburg Rd).

Follows SC 262 (Leesburg Rd) west for 2.2 miles to S-40-69 (Congress Rd).

Follows S-40-69 (Congress Rd) south for 3.6 miles to Toms Creek.

Follows Toms Creek South across US 76/378 (Garners Ferry Rd) for 5.8 miles to S-40-67 Zeigler Rd).

Follows S-40-67 (Zeigler RD) west for 0.5 miles to SC-769 (Congaree Rd).

Follows SC-769 (Congaree Rd) northwest for 0.2 miles to Dry Branch.

Follows Dry Branch southwest for 3.6 miles, past SC 48 (Bluff Rd) and S-40-734 (Old Bluff Rd) to power lines.

Follows power lines west for 1.6 miles to S-40-734 (Old Bluff Rd).

Follows S-40-734 (Old Bluff Rd) west for 1.6 miles to Cedar Creek.

Follows Cedar Creek South 0.1 miles to Congaree Swamp National Monument boundary.

Follows Congaree Swamp National Monument boundary south for 2.0 miles to Congaree River.

Follows Congaree River north to Richland/Lexington/Calhoun County Line.

Follows Lexington/Calhoun county line to S-32-65 (Mack St) and S-32-32 and Pine Plain Rd.

Follows S-32-65 (Mack St) west for 3.0 miles to US 321 (Main St).

Follows US 321 (Main St) north for 1.5 miles to Woodtrail Dr. (S-32-663).

Follows Woodtrail Dr (S-32-663) west for 3.5 miles to Shalam Dr.

Follows Shalam Dr. northwest for 0.5 miles to end and then to Fish Hatchery Rd (S-32-73) at Placid Valley Rd.

Follows Fish Hatchery Rd (S-32-79) southwest for 2.7 miles to SC 6.

Follows SC 6 Southeast for 3.0 miles to W.E. Jeffcoat Rd (S-32-100).

Follows W.E. Jeffcoat Rd (S-32-100) southwest for 1.5 miles to Sharon Church Rd (S-32-342).

Follows Sharon Church Rd (S-32-342) northwest for 0.1 miles to Jeff Sharpe Rd.

Follows Jeff Sharpe Rd west for 1.5 miles to Cherry Blossom Rd.

Follows Cherry Blossom Rd north for 0.3 miles to Hilton Yonce Rd.

Follows Hilton Yonce Rd northwest for 0.7 miles to Pelion Rd (S-32-247).

Follows Pelion Rd (S-32-247) west for 1.4 miles to Old Charleston Rd (S-32-625).

Follows Old Charleston Rd (S-32-625) northwest for 6.5 mile past US 302 (Edmund Hwy) to Calks Ferry Rd (S-32-278).

Follows Calks Ferry Rd (S-32-278) north for 9.0 miles over I-20 to US 1 (Augusta Hwy).

Follows US 1 (Augusta Hwy) west for 7.0 miles to Old Field Rd (S-32-31).

Follows Old Field Rd (S-32-31) north for 1.8 to Cedar Grove Rd (S-32-54).

Follows Cedar Grove Rd (S-32-54) northwest for 3.0 miles to Ansel Caughman Rd (S-32-157).

Follows Ansel Caughman Rd (S-32-157) northwest for 1.5 miles to Lexington/Saluda county line.

Follows Lexington/Saluda county line northeast for 3.5 miles to intersection of Lexington/Saluda/Newberry county line.

Follows Lexington/Newberry county line east, northwest, northeast and east for 17 miles to Lexington/Newberry/Richland county line intersection.

Follows Richland/Newberry county line northeast for 3.0 miles to Broad River/ Richland/Fairfield county line.

Follows Richland/Fairfield county line southeast on Broad River for 9.0 miles, then north on Little River for 3.0 miles and east and northeast to I-77 for 10 miles and to starting point.

## J. Level of Control of Emission Sources

Through its participation with the Early Action Compact, Lexington County is currently exploring local control strategies such as an ozone action coordinator, park and ride facilities, alternate work schedules, alternative fuels, and landfill methane reduction. Richland County is exploring local control strategies such as land-use planning, alternative fuels, alternative fuel vehicles, ozone awareness and education, compressed work weeks, carpool program, and mowing and open burning restrictions.

## K. Regional Emissions Reductions

See Section V of the Introduction.